

Notice of Allowability

Application No.

10/748,886

Examiner

Brian R. Peugh

Applicant(s)

KASAKO ET AL.

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to the interview of 8/28/06.
2. ☒ The allowed claim(s) is/are 30-42 and 44-101.
3. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☒ All b) ☐ Some* c) ☐ None of the:
 1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
 5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☐ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO-1449 or PTO/SB/08), Paper No./Mail Date _____
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☐ Interview Summary (PTO-413), Paper No./Mail Date _____
7. ☐ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____

REASONS FOR ALLOWANCE

The following is an examiner's statement of reasons for allowance: The prior art teaches related backup systems, but fails to teach the combination including the limitation of:

(Claim 30) "...wherein said first storage device and said second storage device change said first information, said second information, said third information and said fourth information based on at least one command sent from said second information processing device so that said second information processing device sends data targeted to said fourth logical volume, if said first information processing device has a failure";

(Claim 48) "... wherein said second controller, after changing said third information and said fourth information, receives data sent from said second information processing device to said fourth logical volume and stores said data sent from said second information processing device in said fourth logical volume and stores data corresponding to said data sent from said second information processing device in said third logical volume and transfers said data stored in said third logical volume to said first storage device, and wherein said first controller, after changing said first information and said second information, receives said data transferred from said second controller and stores said data transferred from said second controller in said second logical volume and stores data corresponding to said data stored in said second logical volume in said first logical volume";

(Claim 54) "...wherein said first storage device and said second storage device change said first information and said second information based on at least one command sent from said second information processing device so that said second information processing device sends data targeted to said fourth logical volume, if said first information processing device has a failure";

(Claim 62) "...said fourth logical volume functions as said primary logical volume, if said second information processing device functions as said primary information processing device, said third logical volume functions as said transferring logical volume, said second logical volume functions as said receiving logical volume, and said first logical volume functions as said secondary logical volume, wherein said storage system is changed from said first status to said second status based on one or more commands sent from said second information processing device";

(Claim 70) "...wherein said storage system has a second status including that said fourth logical volume functions as said primary logical volume, if said second information processing device functions as said primary information processing device, and said third logical volume functions as said transferring logical volume, said second logical volume functions as said receiving logical volume, said first logical volume functions as said secondary logical volume, wherein said storage system is changed from said first status to said second status if said first information processing device has a failure";

(Claim 71) "...wherein said storage system performs a second asynchronous remote copy process according to a second status in which said fourth logical volume

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functions as said primary logical volume, said third logical volume functions as said transferring logical volume, which stores data which is to be transferred to said first storage device, said second logical volume functions as said data storing logical volume, and said first logical volume functions as said auxiliary logical volume, and wherein said storage system is changed from said first status to said second status based on one or more commands”;

(Claim 80) “...wherein said storage system performs a second asynchronous remote copy process according to a second status in which said fourth logical volume functions as a substitute for said primary logical volume which stores data sent from said second information processing device, said third logical volume functions as a substitute for said transferring logical volume which stores data which is to be transferred to said first storage device, said second logical volume functions as said data storing logical volume, and said first logical volume functions as said auxiliary logical volume, and wherein said storage system is changed from said first status to said second status if said first information processing device has a failure and/or if at least one of said first storage device or said second storage device receives at least one command”;

(Claim 88) “...wherein said storage system performs a second asynchronous remote copy process according to a second status in which said fourth logical area functions as said primary logical volume, at least one portion of said third logical area functions as said transferring logical area which stores data which is to be transferred to said first storage device, at least one portion of said second logical area functions

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as said data storing logical area, and said first logical area functions as said auxiliary logical volume, and wherein said storage system is changed from said first status to said second status if at least one of said first storage device or said second storage device receives at least one command”;

(Claim 94) “...wherein said storage system performs a second asynchronous remote copy process according to a second status in which said fourth logical area functions as a substitute for said primary logical volume which stores data sent from said second information processing device, at least one portion of said third logical area functions as a substitute for said transferring logical area which stores data which is to be transferred to said first storage device, at least one portion of said second logical area functions as said data storing logical area, and said first logical area functions as said auxiliary logical volume, and wherein said storage system is changed from said first status to said second status if said first information processing device has a failure and/or if at least one of said first storage device or said second storage device receives at least one command”.

Claims 31-42, 44-47, 49-53, 55-61, 63-69, 72-79, 81-87, 89-93, and 95-101 are allowed as being dependent upon, and thus incorporating therein, the allowable subject matter of the respective parent claims.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably

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accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Brian R. Peugh whose telephone number is (571) 272-4199. The examiner can normally be reached on Monday-Thursday from 7:00am to 4:30pm. The examiner can also be reached on alternate Friday's from 7:00am to 4:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Donald Sparks, can be reached on (571) 272-4201. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

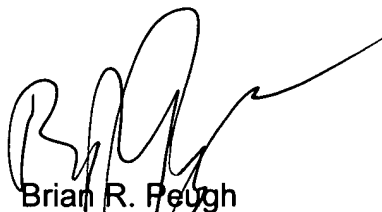
Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 571-272-2100.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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Brian R. Peugh
Primary Examiner
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September 5, 2006